

EPA Conference Call: Discussion Summary

Vertical Confinement

UEC believes that Region 6 does not dispute the presence of extensive clay barriers throughout the full permit area. The voluminous data provided by UEC, which included many cross-sections clearly show that these clay aquitards restrict vertical migration. However, during our joint meeting in Dallas last week, Ray expressed some doubt as to whether this regime extends beyond the AE area – specifically to the south and southeast of the AE Boundary. To clearly demonstrate that the clay barriers described in the permit applications do in fact continue beyond the AE Boundary, we refer you to two cross-sections (C – C' and A" – Up-17-3). A review of these sections show the continuation of sands that are capped above and below by thick clays. In addition to this, we offer the following excerpts from Dr. William Galloway, a renowned Texas geologist who is without doubt the top authority on the geology of the South Texas Uranium Province.

Dr. Galloway in his testimony, stated:

“The portion of the Goliad Formation located in Goliad County was deposited by a large, ancient river known as the Cuero River.... Because the Cuero River was meandering, it formed broad, tabular deposits that are typically thirty to sixty feet thick, thousands of feet to tens of thousands of feet wide and tens of miles long.”

He further stated:

“The clay layers are widespread sheets that extend across and beyond the Mine Permit Area. This would be expected in fluvial deposits where flood plains cover much larger areas than do channel fills.”

A copy of Dr. Galloway's Direct Testimony is attached.

As you can see from Dr. Galloway's testimony, the extension of the regime fully described in the permit applications is expected to continue far beyond the permit area. The clay layers at the site serve as effective confining units between the sands.

Before leaving the subject of vertical confinement, UEC believes that Region 6 has now had the opportunity to review the full pump test, including the measurements on all 9 OMW Wells (Sand A). Ray stated in his PP presentation that the two OMW wells that he had reviewed at that time showed vertical confinement. UEC assumes that since the Region has now had time to review the other 7 OMW Wells and could see that they reacted exactly like the two wells that Ray reviewed. Given that the reaction is the same for all 9 wells, and given that Ray agreed that the two OMW Wells he reviewed demonstrated vertical confinement, it follows that Ray would have to agree that the pump test showed vertical confinement in all wells tested. Based on the above information and the more extensive information provided earlier, UEC believes the subject of vertical confinement has been thoroughly answered.

Groundwater Flow

Groundwater flow, Regional and within the Graben has been discussed at some length during the permitting process, in the contested case hearing and now again at Region 6. UEC provided the Region with good documentation on this subject in mid-July. Without being completely redundant the following summary is offered for our upcoming telephone conference.

Groundwater flow in the graben (between the two faults) is about 15.3 feet per year and the direction of flow is from West to East. Because the new Braquet well and Church well are south of the AE Boundary and because they draw water from the west these wells cannot capture water from the AE area which is to the north. Even if one were to pretend that the graben does not change the direction of regional flow, the time required for the capture zones from the Braquet and Church wells, which are known to be in Sand A, to reach the AE Boundary would be 36.2 years and 95.8 years, respectively.

It is UEC's sincere hope that this data summary, along with the RCT plugging reports brings the subjects of vertical flow and current use to a close.

The Region's attention and input on this matter is much appreciated.